

Network Testbeds: Infrastructure / Connectivity Issues

*Goal: Critique the proposed testbeds from
the point of view of technology and
application project requirements*

Attendees

- Ben Teitelbaum - UCAID (moderator)
- Daniel Lee - USC
- Guy Almes - UCAID
- Mike Underwood - DOE
- Linda Winkler - ANL
- Jim Brandt - SNL
- Richard Mount - SLAC
- James Leighton - ESnet
- Bill Johnston - LBL
- George Seweryniak - DOE (scribe)
- Rene Cruz - UCSD
- Richard Carlson - DOE

PITAC Goals

- Network research developments and demonstration
 - Development of testbed networks with measured e2e speed and functionality advances
 - Development of advanced internet applications
- Geographic reach to rural minority/small colleges
- Technology transfer to industry
- NGI agency coordination
- IT leadership (staying #1)
- *Evaluated at beginning and end of breakout w.r.t. to where DOE-NGI testbeds are going*

Four Advanced Forwarding Services

- High-speed BE
 - Network improvements (latency, RED, measurement) in support of high-perf TCPs very important
 - Need to work with other groups on this
- Statistical assurances for long-term bulk transfer
 - PPDG's regular, daily transfers ("FedEx" replacement)
- Hard loss/latency assurances for interactive visualization, voice
 - QBone Premium Service fits this bill (all three testbeds working towards QBone conformant implementations)
- Advanced reservations fixed bandwidth (remote crystallography) minutes, hours
 - Implications for BB designs
 - AF-style QoS needed or managed BE bandwidth OK?

Also, the “M” Word

- CorridorOne:
 - Historic native multicast difficulties has lead to use of reflectors
 - Reflectors may continue to be OK
- Do any other apps groups need multicast?
- Multicast \sim secure group communication
- Need to work with apps folks to understand multicast priorities: (QoS, speed, reach)

Action Items₁

- Testbed Taskforce Testbed Definition Working Group needs to converge on a defining what interoperable advanced services will be made available
- Need contact for each testbed, especially with regard to Diffserv implementation. (Rene Cruz)
- Encourage working groups to put up WWW pages to help disseminate info and show progress
- Info on analysis as to why measurements show we have not reached theoretical maximum on the testbed

Action Items₂

- Need to get TCP experts to publish testing results to find out what best TCP advances are
- Need high speed encryption?
- Need better understanding of M/C needs
- Is QBone architecture sufficient standard for QoS interoperability?